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On the Prices and Fluctuations of Grain in Prussia and England, from 1816 to 1841. By RAWSON W. RAWSON, Esq., Hon. Sec.

[*Read before the Statistical Society of London, 21st March, 1842.*]

I HAD the opportunity of bringing before the Society, in the first volume of the Journal, a series of tables showing the prices of the principal kinds of grain in Prussia during each year from 1816 to 1837, together with some interesting results drawn from those tables by M. Dieterici, our distinguished foreign Member, which had appeared in the 'Prussian State-Gazette.' I am now enabled, through the kindness and promptitude of the same gentleman, to complete that series up to the close of the year 1841; and as the interest of these tables has greatly increased since the period at which they were first published, I have converted the Prussian measure and prices into their equivalents according to the English standards,* and have appended the prices of the same kinds of grain in England, with the view of offering a few observations upon the comparative prices in the two countries.

It must be premised that there is a difference in the mode of taking the averages in the two kingdoms. In England the averages are calculated weekly upon the total quantities sold and their total sale amount in the 150 towns from which returns are obtained; and thus the element of quantity has its due weight in forming the average. But in Prussia the quantity is not taken into account, and the prices given for that country are the mean of monthly averages furnished by the local authorities in a number of towns possessing considerable corn-markets. Hence an extreme price in the smallest market quoted has as much influence on the average as the price of the largest; or to illustrate the case, the price in a market in which 50 quarters are sold at 50s., will have as much weight in framing the average as a town with a sale of 5,000 quarters at 60s. This is clearly a great defect: a true average can only be furnished when the quantity sold, as well as the price at which it is sold, is taken into account: but it does not appear that this circumstance is likely to affect materially the deductions I shall attempt to draw from these tables; for it may be confidently asserted that in tables thus arranged occasional errors will balance one another, and with regard to a comparison of the price in the different provinces, the uniformity of the method applied to all will prevent any considerable discrepancy from this source.

The prices recorded in Prussia relate to wheat, rye, barley, and oats, and are shown separately for each of the provinces of that kingdom, except Brandenburg and Pomerania, which, on account of the similarity of their agricultural economy, are here united together. I shall commence by showing the differences of price in the several provinces; and in order to bring into view the local circumstances which are likely to have an influence in creating these differences, I shall give a brief sketch of the economical position of each province.

Prussia Proper, divided into East and West Prussia, is the largest

* A Prussian scheffel = 1.504, or $1\frac{1}{2}$ of an imperial bushel, and therefore $5\frac{1}{2}$ Prussian scheffels = 1 imperial quarter. The average rate of exchange at Dantzic upon London, from 1816 to 1838, was Sgr. 203 $\frac{1}{4}$ per £ sterling.

province in the total area. Its extent is 24,927 square miles, or more than one-fifth of the monarchy. It is the most northerly of the Prussian provinces, and extends from the frontier of Russia, having the Baltic for its northern boundary, to the westward of the Gulf of Dantzic. The surface of the country is almost one unbroken level; sandy plains extending along the sea-shore: the soil is generally fruitful, and adapted to the growth of wheat. The population is not dense, being 83 to a square mile: the proportion of the town to rural population is 1 to 3 $\frac{1}{2}$. Agriculture is almost the sole employment of the inhabitants, with the exception of the most common domestic manufactures for their own use, carried on in their private dwellings during the intervals of out-door employment, or by the unemployed members of the families. An active trade is carried on in the seaports, but no manufactures of any consequence exist there. Rye-bread is the staple food of the inhabitants: wheaten bread is seldom used. In many parts of the province potatoes are largely consumed. Wheat is one of the chief articles of export. From Dantzic alone there were exported annually, on the average of the five years 1836-40, 363,000 quarters of wheat, and 54,000 barrels of flour, besides 123,000 quarters of other grain: but a large proportion of this—two-thirds, according to Mr. Meek—appears to be brought from Poland.

Posen is an inland province, bounded on the east by Poland, on the north by West Prussia, on the west by Brandenburg, and on the south by Silesia. Its extent is 11,352 square miles; its population 98 to the square mile. The proportion of town to rural population is 1 to 3 $\frac{1}{2}$. The soil is generally very fruitful, and much wheat is cultivated, chiefly for exportation. Some trifling woollen manufactures are carried on in the small towns, but these are decaying; while agriculture, on the contrary, is rapidly advancing.

Pomerania extends from the boundary of Prussia Proper, along the shores of the Baltic, westward to the frontier of Mecklenburg. Its area is 12,000 square miles, with 63 inhabitants to each mile. The proportion of town to rural population is 1 to 4. The province is essentially agricultural; it produces much corn, but more rye than wheat, although the latter plant flourishes here, and there is a surplus cultivated for exportation. The quantity of wheat shipped at Stettin, the chief port of the province, during the five years 1836-40, averaged 138,000 quarters annually: in 1840 alone the export was 426,300 quarters, but of this a large portion doubtless was brought from Posen and Silesia. The peasantry live upon rye-bread; they consume also a considerable quantity of potatoes, which are more extensively cultivated here than in Prussia Proper.

The three provinces of Prussia Proper, Posen, and Pomerania, with the Mark of Brandenburg, forming one half of the area of the kingdom, and containing about one-third of the population, may be considered as one vast plain, yielding a large surplus of agricultural produce for exportation. As about one-fourth of the total quantity of wheat produced in Prussia is exported, and as almost the whole of that produced in the other provinces is retained by them for their own consumption, it follows that considerably more than the fourth part of that grown in the above three provinces is exported.

In these tables Brandenburg has been united with Pomerania, on account of the general resemblance of the agricultural productions of

the two provinces, as well as their local affinity, although there are other circumstances which, as far at least as the price of grain is concerned, would seem to require that it should be separated. Brandenburg is an inland province, lying south of Pomerania, north of Silesia, with Posen on the east, and Saxony on the west. It contains 15,467 square miles, with a population of 107 to each mile. If, however, Berlin, which contains 275,000 inhabitants, be excluded, the proportion will be 87 to the square mile. The proportion of town to rural population is 10 to 14 including Berlin, and 10 to 22 excluding that city. Thus it will be seen that in Brandenburg a much larger proportion of the inhabitants dwell in the towns than in the preceding three provinces, in which the urban population was as 1 to $3\frac{1}{2}$ and 4. Another great difference exists with regard to the employment of the inhabitants. In this province manufactures are carried on to a large extent, and create great activity both of internal communication and foreign commerce. Among the principal manufactures of the province are those of woollens at Luckenwalde, Luckau, Brandenburg, Kottbus, Züllichau, &c.; of cottons, at Berlin, Potsdam; of silk goods at the same, with Gleissen, &c.; of leather at the same, with Brandenburg and Frankfort; of refineries of sugar at the same, with Frankfort; of iron and steel at Berlin and Neustadt-Eberswalde; of hardwares, porcelain, paper, &c. at Berlin. The following comparison of the extent of manufactures carried on in Brandenburg, the three provinces of Prussia Proper, Posen, and Pomerania, and the whole kingdom, in 1837, will show this still more clearly:—

	Total In Prussia.	In Brandenburg.	In Prussia Pro- per, Posen, and Pomerania.
Quantities of raw cotton imported, lbs.	13,102,991	4,797,537	525,414
— cotton-yarn do. lbs.	20,102,628	5,504,341	55,976
Cotton looms in constant employ- mentNo.	39,324	4,898	101
Woollen spindlesNo.	401,210	128,867	53,427
Ditto looms in constant employment No.	16,937	4,621	2,082
Linen looms in constant employ- mentNo.	35,877	5,644	4,312
Ditto occasional ditto . . .No.	246,294	24,877	156,420
Silk looms at workNo.	14,111	2,315	none.

The Oder and Elbe, with their tributaries, intersect the province, and afford great facilities to commerce. On the banks of these rivers, and in some other parts, there are fertile districts; but in general the soil is sandy, and not very favourable to cultivation. Corn is not grown for exportation; on the contrary, there is a considerable importation, but chiefly for the supply of Berlin.

Silesia is the most southerly of the eastern provinces, bounded on the north by Posen, on the east by Poland, south by Moravia, and west by Bohemia and the kingdom of Saxony. It is intersected throughout its whole length of 230 miles by the Oder, the breadth of the province not exceeding 73 miles. Its area is 15,695 square miles. The population is much denser than in the preceding provinces, being 160 to the square

mile; but the proportion of town population is smaller, being only 1 to 4½. This, however, is not occasioned by a deficiency of towns, but by the greater density of the rural population. As Silesia is separated from Moravia and Bohemia by a high range of mountains, that part of the province partakes of a mountainous or hilly character. The valleys, however, are fertile, and the upper half of the province is a rich plain. Much corn is grown, and in favourable seasons the surplus is exported to Bohemia.* As, however, the mountainous districts yield but a scanty supply of grain, while they are inhabited by a dense population, the production of the province in unfavourable years is not equal to its consumption, and grain is consequently then imported. Manufactures are carried on to a great extent in Silesia; one-third of the whole number of looms employed on linen goods in Prussia are at work in this province, viz., 12,799 out of 36,879. Of cotton looms also a still larger proportion, viz., 17,739 out of 39,324. The manufacture of woollen yarn and cloth is also extensive. But all of these are for the most part carried on by the hand, and in the houses of the peasantry, although latterly some extensive factories fitted with machinery have been established.

Saxony, situated to the west of Brandenburg, has an area of 9,747 square miles, and a population of 152 to the square mile. The proportion of town to rural population is as 10 to 19. Manufactures and commerce are actively carried on here. Of the former, those of woollens flourish at Burg, Magdeburg, Barby, Langensalze, Naumburg, and Zeiz. The cotton manufacture is very important, and is increasing steadily; its chief seats are Magdeburg and Zeiz, Eilenburg, Suhl, and Langensalze. The manufacture of linens is not considerable, but that of leather very extensive. The iron and steel works of Suhl have a wide reputation. The soil is fruitful, and yields sufficient to supply the dense population; there is even an export of corn from the districts of Magdeburg and Thuringia.

Westphalia is the smallest of the Prussian provinces. Its extent is 7,786 square miles; its population is 166 to the square mile; the proportion of town to rural population 1 to 3½. Westphalia exhibits great contrasts in its different divisions, as well in the physical features and fertility of the country, as in the character of the inhabitants. It possesses important silk, cotton, linen, iron, and steel manufactures. It produces enough food for the consumption of the province, but no surplus for exportation. The population is dense, and, compared with that of the eastern and northern provinces, is in a better condition, and possesses a greater command of comforts and luxuries.

The Rhenish province, it need scarcely be said, is one of the chief seats of manufacturing industry in the Prussian kingdom, particularly of the silk-trade. Its extent is 10,308 square miles; the population is 232 to the square mile, or two-fifths more numerous than in Westphalia, Silesia, or Saxony, and more than twice as numerous as in the other provinces. The province, indeed, is more populous than any other country in Europe, except Belgium and Saxony. The proportion of town to rural population is as 10 to 29; but it must be observed that a considerable portion of the latter are employed in manufactures. The

* M. Dieterici does not notice any exportation by the Oder through Stettin.

soil is generally fruitful, and produces sufficient corn for the consumption of the province, but no surplus for exportation.

Thus, then, of the eight provinces of Prussia, it appears that three are almost wholly agricultural, and produce more grain than they consume, namely, Prussia Proper, Posen, and Pomerania. In Brandenburg manufactures predominate, and grain is imported. In Silesia agriculture and manufactures are so blended together, the peasantry employing their time alternately in one or the other pursuit, that it is difficult to define the general character of the province. It appears, however, that the production does not usually exceed the demand of the inhabitants. Saxony and Westphalia contain extensive manufactures: the former exports a small portion of grain; the latter none. In the Rhenish provinces manufactures predominate, and there is no export of grain.

Throughout the whole of Prussia rye is the staple food of the inhabitants; the consumption of wheat is equal only to about a fourth of that of rye. By the Prussian law a duty is levied on grain when ground, so that there are means of forming an estimate of the comparative consumption of the different provinces, and this M. Dieterici has furnished for one year in his valuable work.*

According to his statement, the average annual consumption of each inhabitant in the 124 towns in which a tax on grinding and slaughtering cattle (*mahl-und-schlachtsteuer*) is levied, was as follows:—

	Rye. lbs.	Wheat. lbs.	Total. lbs.	Proportion of Wheat to total quantity.
In 6 towns of E. Prussia .	232	50	282	17 per cent.
6 „ W. Prussia .	262	47	310	15 „
17 „ Posen .	259	50	310	16 „
14 „ Pomerania .	240	75	316	23 „
20 „ Silesia .	266	44	310	14 „
19 „ Brandenburg .	212	82	294	27 „
18 „ Saxony .	277	65	343	19 „
7 „ Westphalia .	223	73	296	24 „
17 „ Rhine Province	226	68	294	23 „
Average . .	240	65	306	21 per cent.

Upon this table it is necessary to remark that the small number of towns from which the average is taken in Westphalia occasions the proportion of wheat in that province to be unduly raised by a very large consumption of that grain in one town, Münster. The proportion in E. Prussia is in the same manner depressed by a very small consumption in Tilsit, which, as it is the smallest proportion recorded in any town, may be specially mentioned, viz., only 6 lbs. of wheat to 305 lbs. of rye. The largest proportion in any town was at Bromberg, in Posen, where the consumption was 108 lbs. of wheat to 124 lbs. of rye; but the largest actual consumption of the former grain was at Magdeburg, viz., 119 lbs., with 248 lbs. of rye. The high proportion in Brandenburg is not occasioned by the consumption of Berlin, where the proportion is only 88 lbs. of wheat to 180 lbs. of rye;—the deficiency

* Uebersicht des Verkehrs und Verbrauchs im Preussischen Staate und im Deutschen Zollverbände. Berlin, 1838.

in quantity of both grains being probably supplied by flour brought from a distance. It must, however, be observed that this statement refers to the consumption of the town population, among whom the use of wheat is doubtless more general than among the inhabitants of the rural districts. The proportion, therefore, of wheat to rye must be taken at considerably below one-fifth, the amount above stated; and consequently, in examining the differences in the prices or fluctuations of the staple food in England and Prussia, the same kinds of grain must not be compared in the two countries, but the wheat of England with the rye of Prussia: the consumption of wheat in the latter country being, indeed, of less consequence as a luxury than that of rye in England, which, as far as it is used, is applied to the sustenance of the working classes. There is no means of ascertaining the actual extent of the consumption of rye bread in England, but it may be inferred from the fact that the annual sales of rye in England returned to the corn-office during the last fourteen years have only averaged 18,314 quarters; and that, while 17,566,270 qrs. of foreign and colonial wheat and wheat-flour have been entered for consumption between 15th July, 1828, and 5th January, 1842, only 453,103 qrs. of foreign rye have been entered during the same years, although the high price and limited supply of wheat during portions of this period have presented a strong inducement to the consumption of rye.

In examining the prices of the various kinds of grain in England and Prussia, and forming averages for the purpose of comparison, it has been thought unnecessary to take the average upon the whole period over which the tables extend. In the first place, it appeared desirable to omit the years 1816-20, when, in consequence of the complete failure in both countries of the harvest of 1816, prices were so signally deranged that they did not recover their level for four years afterwards; and, in the second place, as a period of fourteen years offers a sufficient range for forming a fair average, it appeared to be an object to examine the prices which have prevailed under the corn-law existing in this country since 1828, and respecting the effects of which various statements have been put forward, founded, in many instances, on insufficient data, the imperfection of which these tables will in some measure supply.

With regard, first, to the prices of grain in Prussia. The average of Rye during the fourteen years was 21*s.* 2*d.* per imperial quarter (see p. 45): in the several provinces it was as follows:—

Provinces.	Price per Imperial Quarter.	Higher than average.	Lower than average.
	<i>s.</i> <i>d.</i>		
Prussia Proper	17 2	..	19 per cent.
Posen	18 3	..	13 „
Brandenburg and Pomerania	20 2	..	4 „
Silesia	19 3	..	9 „
Saxony	21 8	2 per cent.	
Westphalia	25 2	19 „	
Rhine Province	26 11	27 „	
Average	21 2		

The average of the first five, or agricultural provinces, was 18*s.* 8*d.*; of the last three, or manufacturing provinces, 24*s.* 7*d.*, or nearly one-third

(31 $\frac{3}{4}$ per cent.) higher in the latter part of the kingdom. This difference presents an important consideration, bearing upon the comparative disadvantage under which the manufacturer in this country labours in respect of the price of food. In Prussia the price ranges much higher in those provinces in which manufactures chiefly flourish. In England it may be doubtful whether the case is the same. The facility of communication, the superior development of commercial enterprise, and, as regards Lancashire, the proximity of the cheap markets of Ireland, have tended to prevent prices from rising above the average in the principal manufacturing districts. On the other hand, in the chiefly agricultural and most productive districts of England the quality of the grain is usually above the average, in consequence of which, and their proximity to the metropolis and other large centres of consumption, the prices are rather above than below the average.

The average price of Wheat in Prussia during the fourteen years was 31*s.* 3*d.* per imperial quarter. The fluctuation in the several provinces was less than that of rye. (See page 45.) The average price was:—

Provinces.	Price per Imperial Quarter.	Higher than average.	Lower than average.
	<i>s.</i> <i>d.</i>		
In Prussia Proper	30 1	..	4 per cent.
Posen	29 1	..	7 „
Brandenburg and Pomerania	31 2	..	
Silesia	27 8	..	11 „
Saxony	29 3	..	6 „
Westphalia	34 3	9 per cent.	
Rhine Province	37 7	20 „	
Average	31 3		

In respect of wheat, it appears that the prices are lowest in the inland provinces, which have no immediate market for their surplus production; and that this circumstance is probably one cause of the difference, may be inferred from the comparatively high price in Prussia Proper, where, as has been shown in a previous table, the consumption of wheat is small, and the export is considerable. The average price in Westphalia and the Rhine province was 35*s.* 11*d.*, in the other five provinces, 29*s.* 5*d.*; a difference of 22 per cent.

Of Barley, the average price was 15*s.* 11*d.* (See page 46.) It was—

Provinces.	Price per Imperial Quarter.	Higher than average.	Lower than average.
	<i>s.</i> <i>d.</i>		
In Prussia Proper	12 5	..	22 per cent.
Posen	14 1	..	11 „
Brandenburg and Pomerania	14 9	..	7 „
Silesia	15 2	..	5 „
Saxony	16 3	2 per cent.	
Westphalia	18 8	17 „	
Rhine Province	20 6	28 „	
Average	15 11		

The correspondence of the differences in the several provinces as

regards this grain and rye is very striking ; and affords a strong reason to suppose that the same circumstances affect the price of the two articles.

The average price of Oats during the whole period was 11*s.* 4*d.* (See page 46.) The uniformity of the prices in the several provinces, with only two exceptions, is remarkable :—

Provinces.	Price per Imperial Quarter.	Higher than average.	Lower than average.
	<i>s. d.</i>		
In Prussia Proper	9 0	..	20 per cent.
Posen	11 0	..	3 „
Brandenburg and Pomerania	11 8	3 per cent.	
Silesia	11 0	..	3 „
Saxony	11 7	2 „	
Westphalia	12 7	11 „	
Rhine Province	11 10	4 „	
Average	11 4		

With regard to the exceptions, M. Dieterici states that the cause of the price being higher in Westphalia than in the Rhine province is the greater number of horses in the former. The same circumstance would tend to operate to a still greater extent in Prussia Proper, where, on the contrary, the price is considerably below the average. Some counteracting influence must, therefore, be at work. Probably the fact of Lithuania being a great breeding district, and the advantages which the province offers for the cultivation of grain, are sufficient to account for the reduced price. The number of horses to a square mile in each province was, in 1834—

Prussia	17	} Average 13.
Westphalia	16	
Saxony	15	
Posen	11	
Rhine Province	11	
Brandenburg	11	
Pomerania	11	
Silesia	10	

The average prices, therefore, of each kind of grain, with the highest and lowest price in the several provinces, were as follows :—

	Average.	Highest.	Lowest.
	<i>s. d.</i>	<i>s. d.</i>	<i>s. d.</i>
Wheat	31 3	37 7 in the Rhine province.	27 8 in Silesia.
Rye	21 2	26 11 „	17 2 in Prussia Proper.
Barley	15 11	20 6 „	12 5 „
Oats	11 4	12 7 in Westphalia.	9 0 „

The average prices in England during the same period were—

	Average per Imperial Quarter	Above Price in Prussia.		Above Price in Rhine Province.	
		Amount.	Per Centage.	Amount.	Per Centage.
	<i>s. d.</i>	<i>s. d.</i>		<i>s. d.</i>	
Of Wheat	58 10	27 7	88.	21 3	56.
Rye	35 3	14 1	66.	8 4	31.
Barley	32 9	16 10	105.	12 3	59.
Oats	22 10	11 6	101.	11 0	93.

The difference, however, between the average prices of the two staples is very much greater: Wheat, in England, was nearly three times ($2\frac{3}{4}$) as dear as Rye in Prussia, or as 2·78 to 1·00: compared with Rye in the Rhine province, it was more than double ($2\frac{1}{2}$), or as 2·18 to 1·00.

The average of the four kinds of grain in Prussia was 19s. 11d. per imperial quarter; in England, 37s. 5d.; a difference of 87 per cent. In the first four provinces of Prussia it was 18s. 2d.; in the last three, 22s. 2d.; a difference of 22 per cent.

In considering, however, the relative prices of grain, and particularly of wheat, in the two countries, as bearing on the question of the effect which a free importation would be likely to have on the price in England, it must be borne in mind that the average in Prussia is formed chiefly on the prices of inland towns; that the cost of bringing wheat from the place of growth to Dantzic is stated to average 10s. to 12s. per quarter;* that three at least of the Prussian provinces have no surplus for exportation, but, on the other hand, import for their own consumption; and that a demand for wheat in England immediately leads to a great rise of price in Prussia. The extent of this action of English prices on those of Prussia will be presently adverted to.

The relative proportion of the value of the different kinds of grain in the two countries is very similar. If the four kinds be taken together, wheat bears exactly the same relation to the whole in both. Thus, if the prices of one quarter of each kind of grain be added together, the result will be that the per centage of each to the whole amount will be—

	In England.		In Prussia.
Wheat . . .	39·0	..	39·0
Rye . . .	23·5	..	26·5
Barley . . .	22·0	..	20·0
Oats . . .	15·5	..	14·5
	<u>100·0</u>		<u>100·0</u>

Rye, as might be expected, obtains a higher relative value in Prussia than in England; spring corn, comparatively less; but in wheat there is no difference. Taking the value of wheat as unity, which will not be quite fair, as it is not the staple in Prussia, there is some variation, but not to any great extent. If wheat be worth 1·00, the value of the other kinds of grain will be as follows:—

Rye in England,	0·60	In Prussia,	0·67
Barley „	0·55	„	0·51
Oats „	0·38	„	0·36

I now approach the question of fluctuation: a matter of double importance, as bearing, first, upon the welfare and ease of the labouring classes, apparently much more than the uniform maintenance of high prices, since wages may be fixed at a high rate to meet the latter, but

* “Deducting 12s. per quarter for the expense of bringing it (wheat) from the place of growth to Dantzic, including waste, which is generally very considerable, cost of the boats, which are broken up and sold for a trifle compared with their original cost (amounting perhaps to 400 or 500 thalers, whereas they are only sold for about 40), the expense of the peasants and other persons navigating them for a voyage, sometimes of three or four months, and returning back to Poland on foot. . . . This was generally considered as an average estimate of the expenses.” (Mr. Meek, Parliamentary Papers, Sess. 1842, No. 7, p. 54.)

“It is generally understood that it costs 10s. per quarter to bring it down to Dantzic.” (Ibid., p. 31.)

seldom fluctuate in proportion to the price of corn; and secondly, upon the effect of fiscal regulations in creating unsteadiness of price. Corn of all kinds pays alike in Prussia a fixed duty of *5sq.* a scheffel, or *2s. 7½d.* per imperial quarter; there is nothing, therefore, in the nature or amount of this duty to cause artificial variations of price in that country; and, with the exception of the effect produced in the value of wheat by occasional and large demands of that article for the English market, there does not appear any circumstance tending to create fluctuation in Prussia, except the natural and uncontrollable variations of the seasons. It is, therefore, an important result which a comparison of the prices in the two countries exhibits—that in all kinds of grain, the fluctuation, in whatever point of view taken, whether as regards the extreme extent of fluctuation, the suddenness of the change, or the frequent recurrence of inequalities,—in all these respects the fluctuation is equal or greater in Prussia during the period under observation than in England.

In order to state the case fairly, the first comparison should be between the two staples—wheat in England, and rye in Prussia. The small consumption of rye in England renders it improper to compare its prices with those of Prussia; and the same reason, together with the artificial fluctuation already mentioned as arising from an English demand, applies to wheat in Prussia. For the sake, however, of information, the results relative to both will be inserted.

It appears that, during the 14 years from 1828 to 1841, the greatest extent of fluctuation in the annual price of wheat in England has been 79 per cent.; of rye in Prussia, 88 per cent.; and of wheat in the same country, 80 per cent. The average of the annual fluctuations was—of wheat in England, 10·4 per cent.; of rye in Prussia, 10·3 per cent.; and of wheat in Prussia, 13·1 per cent. The greatest rise in any one year was—of wheat in England, 23 per cent.; of rye in Prussia, 37 per cent.; and of wheat in Prussia, 33 per cent. The greatest fall in any one year was—of wheat in England, 14 per cent.; of rye in Prussia, 25 per cent.; and of wheat in Prussia, 27 per cent. A tabular view of these facts may perhaps help to mark the differences:—

	Prussia.		England.	
	Wheat.	Rye.	Wheat.	Rye.
Extreme extent of annual fluctuation	Per Ct. 80	Per Ct. 88	Per Ct. 79	Per Ct. 38
Average annual amount of ditto	13·1	10·3	10·4	6·6
Greatest rise in any one year	33	37	23	19
Greatest fall in ditto	27	25	14	13

It may be asserted, apparently with some justice, that the demand for wheat in England in particular years tends to derange the prices of that grain in Prussia; for it appears that, in the years 1828-31, when this country took 1,425,721 quarters of wheat and wheat-flour from Prussia, the prices rose from 20*s.* 10*d.*, the average of the preceding three years, to 30*s.* 4*d.* in 1828, and continued rising to 1831, when it averaged 41*s.* 3*d.* In the next year,—there being still a considerable, though much reduced, demand for England,—the price fell to 33*s.* 10*d.*; and in the next year it fell further to 24*s.* 6*d.*, at about which amount it re-

mained nearly stationary until 1838, when the bad harvest and high price in England, causing a demand for 585,973 quarters in that year alone, immediately drove it up from 24s. 11d. to 33s. 3d.; and an additional demand for 767,734 quarters in 1839 caused a further rise to 39s. 5d. The following statement will show the course of these transactions; and the effect of a drain of wheat will be better appreciated when it is shown that the whole consumption of that grain in Prussia does not, according to M. Dieterici's statement, before given, exceed 2,014,000 quarters annually. The population at the close of 1839 was 14,416,410; the annual consumption of each individual was given at 65 lbs. = 67 lbs. avoirdupois. Supposing, therefore, the wheat to weigh 60 lbs. a bushel, which is the ordinary weight of the description exported to England, the total consumption will be 2,014,375 quarters.

Years.	Prices of Wheat in England.	Imports of Wheat and Wheat-Flour into the United Kingdom from Prussia.	Prices of Wheat in Prussia.
	<i>s. d.</i>	<i>Qrs.</i>	<i>s. d.</i>
1828	60 5	253,042	30 4
1829	66 3	353,958	34 11
1830	64 3	520,111	33 3
1831	66 4	298,610	41 3
1832	58 8	119,323	33 10
1833	52 11	93,121	24 6
1834	46 2	41,754	23 0
1835	39 4	13,890	24 0
1836	48 6	122,996	22 10
1837	55 10	350,252	24 11
1838	64 7	585,973	33 3
1839	70 8	767,734	39 5
1840	66 4	807,203	36 10

It appears too that during the previous period, in the years 1824 and 1825, when under the law of 1822, (by which the admission of foreign wheat was prohibited until the price in England reached 70s. 4d., and consequently there was no demand in England for Prussian wheat,) the price rose in this country from 53s. 4d. (in 1823) to 63s. 11d. and 68s. 6d., the price actually fell in Prussia from 27s. 9d. to 19s. 9d. and 18s. 2d.; apparently from the want of a market for the surplus produce of one or two abundant harvests, which under the law of 1828 this country supplied. The great rise of price in 1816-17 cannot be quoted in support of this view, as the bad harvest and consequent dearth of the former year was almost universal throughout Europe.

On the other hand it must be remarked, that during the last fourteen years, in which the English prices appear to have operated so materially on those of Prussia, a corresponding fluctuation may be observed in the prices of the Rhine province, *from which we import no wheat*, and which is quite detached from the eastern provinces of Prussia, and not in any way dependent upon them for a supply. The comparative extent of the fluctuations in the prices of Barley and Oats in the two countries is also opposed to the above view. The superior steadiness of the English prices is strongly exhibited in the following statement:—

	Barley.		Oats.	
	England.	Prussia.	England.	Prussia.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Extreme extent of annual fluctuation	43	60	40	50
Average annual amount of ditto	9	12·6	7·1	10·2
Greatest rise in any year	25	32	15	28
Greatest fall in ditto	17	30	19	21

Prussia exports but a small quantity of these two kinds of grain to England, far too little to affect the prices in the former country.

The prices of Rye, likewise, of which England imports but an insignificant quantity, and during a period when a rise in the price of wheat did not exist, to which a sympathetic rise in that of rye could be attributed, do not bear out the position. The comparative fluctuations of this grain in Prussia, and of wheat in England, throughout the whole period of 26 years, is shown in the following table; from which it results that, while the extreme difference of annual fluctuation in England was 91 per cent., it was 158 in Prussia; and that, while the average annual fluctuation was 11 per cent. in England, it was 18 per cent. in Prussia: showing that the annual fluctuations are greater in the latter country by 63 per cent. than in England.

Years.	Average Prices per Imperial Quarter.		Per Centage Fluctuation upon the Average of 26 Years.		Per Centage Fluctuation in each Year upon the preceding Year.	
	Wheat in England.	Rye in Prussia.	Wheat in England.	Rye in Prussia.	Wheat in England.	Rye in Prussia.
	s. d.	s. d.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
1816	78 6	35 3	+ 25	+ 59	—	—
1817	96 11	45 11	+ 54	+ 107	+ 23	+ 30
1818	86 3	34 0	+ 37	+ 54	— 11	— 35
1819	74 6	25 11	+ 18	+ 17	— 13	— 23
1820	67 10	19 7	+ 8	— 11	— 9	— 24
1821	56 1	17 3	— 10	— 21	— 17	— 12
1822	44 7	19 2	— 28	— 13	— 20	+ 11
1823	53 4	21 6	— 15	— 2	+ 19	+ 12
1824	63 11	11 3	+ 1	— 49	+ 19	— 45
1825	68 6	10 9	+ 9	— 51	+ 7	— 8
1826	58 8	15 3	— 6	— 31	— 14	+ 41
1827	58 6	22 0	— 6	Nil.	Nil.	+ 44
1828	60 5	22 7	— 3	+ 2	+ 3	+ 2
1829	66 3	20 4	+ 5	— 8	+ 9	— 10
1830	64 3	21 11	+ 2	Nil.	— 3	+ 7
1831	66 4	29 0	+ 5	+ 31	+ 3	+ 37
1832	58 8	25 7	— 6	+ 15	— 11	— 11
1833	52 11	18 0	— 15	— 18	— 9	— 29
1834	46 2	16 11	— 26	— 23	— 12	— 6
1835	39 4	18 1	— 37	— 18	— 14	+ 7
1836	48 6	15 5	— 22	— 31	+ 22	— 13
1837	55 10	17 3	— 10	— 21	+ 15	+ 11
1838	64 7	23 8	+ 2	+ 7	+ 15	+ 37
1839	70 8	24 1	+ 12	+ 9	+ 9	+ 2
1840	66 4	22 11	+ 5	+ 4	— 6	— 5
1841	64 4	21 3	+ 2	— 3	— 3	— 7
Average	62 9	22 1	of { 14 years + 13 12 ,, — 15	10 years + 30 12 ,, — 30	11	18

Extreme difference of annual fluctuation of Wheat in England 91 per cent.
 „ „ „ Rye in Prussia 158 „

Indeed, the fact is, with regard to rye, that the fluctuation was greater previous to 1828 (excluding even the years 1816-20) than since; and that during the earlier period occurred that remarkable case which has been already noticed elsewhere, in which the price fell 50 per cent. in two years, and rose 105 per cent. in the following two.* Between 1821 and 1828 the extreme annual fluctuation of rye in Prussia was from 10s. 9d. to 22s. 7d., or 109 per cent.; between 1829 and 1841, from 15s. 5d. to 29s., or only 88 per cent. During the corresponding periods the fluctuation in the annual price of wheat in England was 53 and 79 per cent. respectively.

It appears, therefore, on the whole, that the prices of grain are more steady in England than in Prussia; but that they usually fluctuate more or less in both countries in a similar direction during the same seasons, which will not be difficult of explanation, when it is considered that the most northerly province of Prussia is in the same parallel of latitude as the North Riding of Yorkshire—that Posen is in the same parallel as Norfolk—and Silesia as Sussex.

I shall conclude with a Table, framed with the view of showing the character of the fluctuations in the price of spring corn, and of comparing them with the fluctuations of the staples in the two countries.

Per Centage Fluctuation in each Year compared with the Year immediately preceding.

Years.	England.				Prussia.			
	Wheat.	Rye.	Barley.	Oats.	Rye.	Wheat.	Barley.	Oats.
1829	+ 9.	+ 2.	- 1.	+ 1.	- 10.	+ 15.	- 8.	- 7.
1830	- 3.	+ 2.	Nil.	+ 7.	+ 7.	- 4.	+ 1.	+ 4.
1831	+ 3.	+ 11.	+ 16.	+ 3.	+ 37.	+ 24.	+ 32.	+ 27.
1832	- 11.	- 13.	- 13.	- 19.	- 11.	- 18.	- 3.	- 4.
1833	- 9.	- 4.	- 16.	- 20.	- 29.	- 27.	- 30.	- 21.
1834	- 12.	Nil.	+ 5.	+ 13.	- 6.	- 6.	- 7.	- 5.
1835	- 14.	- 8.	+ 3.	+ 5.	+ 7.	+ 4.	+ 20.	+ 10.
1836	+ 22.	+ 10.	+ 10.	+ 5.	- 13.	- 4.	- 14.	- 5.
1837	+ 15.	+ 4.	- 7.	Nil.	+ 11.	+ 9.	+ 4.	Nil.
1838	+ 15.	+ 1.	+ 3.	- 3.	+ 37.	+ 33.	+ 26.	+ 25.
1839	+ 9.	+ 19.	+ 25.	+ 15.	+ 2.	+ 18.	+ 8.	+ 1.
1840	- 6.	- 12.	- 7.	- 1.	- 5.	- 6.	Nil.	+ 9.
1841	- 3.	Nil.	- 9.	- 13.	- 7.	- 2.	- 15.	- 14.
Average	10.4	6.6	9.	7.3	10.3	13.1	12.6	10.2

From this it appears that the fluctuations of barley and oats have a much closer relation to one another in Prussia than in England, and correspond more closely, both in contemporaneity and average amount, to the fluctuations in the staple. In England there is by no means the same degree of sympathy in prices; and the average of the fluctuations of barley and oats is considerably below that of wheat. In Prussia, on the contrary, the fluctuations in the price of oats equal those of rye, while those of barley exceed them.

* Speech of the Right Hon. W. E. Gladstone, in the House of Commons, March, 1842. See Hansard's Parliamentary Debates.

WHEAT.											
Years.	Prices per Imperial Quarter in Prussia.									Prices per Imperial Quarter in England.	
	Prussia Proper.	Posen.	Brandenburg and Pomerania.	Silesia.	Saxony.	Westphalia.	Rhine Province.	Average.			
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1816	36 9	41 4	44 5	49 10	50 10	58 0	58 10	48 7	78 6		
1817	52 8	50 9	60 10	55 7	64 3	79 9	86 7	64 4	96 11		
1818	38 11	41 1	53 4	42 3	48 5	54 1	55 6	47 8	86 3		
1819	34 4	31 8	38 3	32 5	32 2	40 10	37 10	35 4	74 6		
1820	27 2	27 4	29 9	28 11	27 5	31 4	34 2	29 5	67 10		
1821	25 6	28 7	28 7	35 4	25 6	32 7	29 10	29 4	56 1		
1822	25 11	28 5	26 7	32 10	26 6	31 8	29 2	28 8	44 7		
1823	24 1	27 4	26 8	29 11	27 2	28 5	30 7	27 9	53 4		
1824	18 3	18 10	19 11	20 11	20 10	19 0	20 10	19 9	63 11		
1825	17 0	16 10	17 9	18 5	17 9	18 4	21 5	18 2	68 6		
1826	18 7	18 10	21 0	20 8	17 6	20 0	23 2	19 11	58 8		
1827	22 2	23 1	25 9	25 1	22 0	28 11	29 8	25 3	58 6		
1828	27 1	26 9	28 7	29 9	29 8	32 10	38 0	30 4	60 5		
1829	32 2	31 6	34 11	30 11	34 5	39 6	41 3	34 11	66 3		
1830	29 6	29 3	33 11	28 2	31 10	40 8	39 10	33 3	64 3		
1831	39 7	41 0	39 2	37 7	35 2	48 9	47 10	41 3	66 4		
1832	33 11	31 4	33 4	26 11	29 10	37 9	43 10	33 10	58 8		
1833	24 11	23 2	23 5	21 7	22 0	26 6	30 0	24 6	52 11		
1834	23 8	23 0	22 11	22 8	20 5	22 10	25 9	23 0	46 2		
1835	22 10	24 6	23 9	26 1	22 1	23 4	25 10	24 0	39 4		
1836	20 9	20 11	22 9	20 10	23 2	24 5	27 3	22 10	48 6		
1837	22 4	23 4	25 10	21 7	24 8	26 8	30 5	24 11	55 10		
1838	32 5	31 4	34 7	28 0	31 8	36 1	38 7	33 3	64 7		
1839	36 11	35 7	40 3	33 9	39 8	43 7	46 6	39 5	70 8		
1840	37 9	34 5	37 8	31 6	34 4	39 5	43 1	36 10	66 4		
1841	37 8	33 0	35 4	28 8	30 9	37 1	48 8	35 10	64 4		

RYE.											
1816	22 4	24 8	28 7	35 9	40 4	46 11	48 2	35 3	45 1		
1817	29 9	31 1	38 6	39 10	51 1	62 4	69 1	45 11	58 3		
1818	27 8	26 0	35 5	27 4	36 7	43 3	41 9	34 0	55 4		
1819	22 5	21 3	28 5	21 6	24 11	33 3	30 0	25 11	49 6		
1820	16 2	16 2	19 8	18 6	20 2	22 5	24 3	19 7	42 0		
1821	13 7	14 7	15 3	19 6	17 0	21 11	19 3	17 3	32 0		
1822	15 11	18 3	16 2	23 3	18 5	21 5	21 2	19 2	20 10		
1823	17 1	20 1	19 4	24 11	21 11	21 4	25 10	21 6	31 10		
1824	8 5	9 4	11 0	12 8	12 7	11 8	13 6	11 3	41 5		
1825	9 2	8 7	10 11	9 8	10 8	11 6	15 1	10 9	42 3		
1826	13 9	13 4	16 1	14 2	14 3	16 2	19 0	15 3	41 1		
1827	17 3	19 7	22 1	22 6	21 0	26 5	25 3	22 0	40 2		
1828	14 8	19 7	20 1	24 3	24 10	26 4	28 5	22 7	34 2		
1829	14 1	16 6	19 0	19 9	21 8	24 2	27 2	20 4	34 10		
1830	14 8	18 4	19 5	21 4	20 4	30 11	28 6	21 11	35 10		
1831	22 4	27 11	27 1	25 8	26 3	37 10	35 11	29 0	40 0		
1832	20 10	22 1	24 11	21 3	25 2	30 4	34 5	25 7	34 7		
1833	17 7	14 11	17 1	15 0	18 3	20 10	22 8	18 0	32 11		
1834	16 11	15 4	17 2	16 5	16 2	17 5	19 1	16 11	32 9		
1835	17 6	17 0	19 2	17 2	17 4	19 1	19 9	18 1	30 4		
1836	12 5	12 1	16 0	11 10	17 2	18 0	20 4	15 5	33 4		
1837	14 0	14 3	16 8	14 0	19 0	18 10	24 0	17 3	34 9		
1838	20 6	20 7	22 9	21 1	25 8	26 4	29 2	23 8	35 1		
1839	16 2	19 1	21 5	22 0	28 11	30 3	31 3	24 1	42 0		
1840	17 3	19 8	20 7	21 1	23 10	27 4	30 7	22 11	37 0		
1841	21 0	19 5	20 9	18 5	18 11	24 9	25 10	21 3	36 9		

BARLEY.											
Years.	Prices per Imperial Quarter in Prussia.									Prices per Imperial Quarter in England.	
	Prussia. Proper.	Posen.	Brandenburg and Pomerania.	Silesia.	Saxony.	Westphalia.	Rhine Province.	Average.			
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.		
1816	14 0	16 7	20 10	25 11	26 8	32 10	31 9	24 1	33 11		
1817	18 5	19 11	26 8	29 8	37 10	42 2	49 4	32 0	49 4		
1818	20 4	19 10	26 5	20 11	29 4	31 4	30 11	25 7	53 10		
1819	17 5	16 8	22 3	16 8	20 3	28 0	25 5	20 11	45 9		
1820	11 2	13 2	15 11	13 11	15 7	18 7	19 6	15 4	33 10		
1821	8 8	10 9	11 9	14 11	13 4	16 2	14 5	12 10	26 0		
1822	11 1	12 9	11 8	17 3	15 3	14 8	16 9	14 2	21 10		
1823	13 4	15 7	14 0	18 4	16 4	16 9	20 5	16 4	31 6		
1824	6 6	12 10	8 9	9 4	8 11	10 3	10 10	9 7	36 4		
1825	7 0	12 7	8 8	7 8	9 0	10 3	12 9	9 8	40 0		
1826	10 6	10 9	12 2	10 7	11 2	13 7	14 9	11 11	34 4		
1827	13 9	15 2	16 7	16 7	15 4	20 3	19 0	16 8	37 7		
1828	10 5	15 1	14 2	19 2	16 10	17 9	21 2	16 4	32 10		
1829	9 9	12 6	14 3	16 4	16 2	17 0	19 2	15 0	32 6		
1830	9 7	13 5	13 11	15 11	14 9	20 3	19 3	15 3	32 7		
1831	15 11	19 11	17 4	18 4	18 1	26 9	24 11	20 2	38 0		
1832	15 10	17 9	18 1	16 7	18 11	22 2	27 3	19 6	33 1		
1833	11 7	10 11	12 2	11 3	14 6	16 4	18 9	13 7	27 6		
1834	11 8	11 8	12 5	12 2	12 5	13 4	14 10	12 7	29 0		
1835	13 7	14 5	15 3	15 6	14 10	16 6	15 11	15 1	29 11		
1836	10 2	11 1	12 11	10 3	14 6	15 6	16 5	12 11	32 10		
1837	10 11	11 2	12 11	11 0	14 8	14 10	18 7	13 5	30 4		
1838	14 5	14 6	16 4	15 5	17 8	18 6	22 3	17 0	31 5		
1839	12 5	14 10	16 10	18 4	22 3	20 11	23 3	18 4	39 6		
1840	13 7	15 5	16 2	17 9	19 0	21 9	25 3	18 4	36 5		
1841	14 4	14 8	13 10	14 3	13 3	19 7	19 9	15 8	32 10		

OATS.											
1816	11 0	13 7	15 3	18 7	17 7	19 10	17 10	16 3	27 2		
1817	14 5	14 9	19 9	20 3	21 2	25 1	26 3	20 3	32 5		
1818	15 3	14 7	19 6	16 6	22 3	20 5	17 1	17 11	32 5		
1819	12 6	12 2	16 9	12 9	16 0	20 2	17 7	15 4	28 2		
1820	9 0	10 6	12 9	11 2	12 3	13 3	14 2	11 10	24 2		
1821	6 11	7 10	9 5	10 6	10 8	10 11	8 7	9 3	19 6		
1822	7 7	9 11	9 9	12 8	11 7	10 4	10 9	10 4	18 1		
1823	9 9	11 8	11 3	13 9	13 1	13 0	12 11	12 2	22 11		
1824	5 4	6 0	7 1	7 1	6 9	7 3	7 2	6 8	24 10		
1825	5 5	5 9	6 7	6 3	6 8	7 7	9 1	6 9	25 8		
1826	8 5	8 2	9 7	8 8	8 10	10 7	10 11	9 3	26 8		
1827	10 9	11 0	12 6	12 4	11 4	13 6	12 2	11 11	28 2		
1828	7 8	10 11	11 4	13 8	11 6	12 4	13 3	11 6	22 6		
1829	7 2	9 7	11 1	11 6	11 5	11 8	12 2	10 8	22 9		
1830	7 2	10 8	11 1	12 2	10 10	13 11	11 9	11 1	24 5		
1831	12 0	15 4	13 7	13 2	12 4	18 1	15 0	14 2	25 4		
1832	11 4	13 1	13 5	10 8	13 5	15 11	17 0	13 6	20 5		
1833	8 4	9 2	10 5	8 2	11 7	13 0	13 4	10 7	18 5		
1834	8 5	10 1	10 6	10 7	9 4	10 8	11 2	10 0	20 11		
1835	9 2	11 1	11 9	11 2	11 0	11 7	11 6	11 0	22 0		
1836	7 0	8 4	10 1	7 4	11 0	10 9	11 6	9 5	23 1		
1837	7 6	8 9	10 0	8 4	10 5	9 5	11 8	9 5	23 1		
1838	9 7	11 10	12 9	11 7	12 6	11 10	12 8	11 10	22 5		
1839	9 1	10 11	12 11	11 9	14 4	13 0	12 1	12 0	25 11		
1840	10 7	13 2	13 3	13 2	12 4	14 8	14 6	13 1	25 8		
1841	10 11	11 8	11 3	11 3	9 8	11 10	12 4	11 3	22 5		